

Attorney Docket No. 990288

IN THE CLAIMS

- Sub 307*
1. (Canceled).
  2. (Canceled).
  3. (Canceled).
  4. (Canceled).
  5. (Canceled).
  6. (Canceled).
  7. (Canceled).
  8. (Canceled).
  9. (Canceled).
  10. (Canceled).
  - A1*  
*cont*  - 11. (Canceled).
  - 12. (Canceled).
  - 13. (Canceled).
  - 14. (Canceled).
  - 15. (Canceled).
  - 16. (Canceled).
  - 17. (Canceled).
  - 18. (Canceled).
  - 19. (Canceled).
  - 20. (Currently Amended) A receiver unit comprising:

Attorney Docket No. 990288

a receiver operative to receive and condition a received signal in accordance with one or more control signals to generate a conditioned signal and operative to downconvert and digitize the conditioned signal to provide inphase ( $I_{IN}$ ) and quadrature ( $Q_{IN}$ ) samples, wherein the receiver includes one or more circuit elements having one or more characteristics that are adjustable by the one or more control signals;

a controller coupled to the receiver and operative to determine a phase rotation corresponding to an operating state defined by the one or more control signals; and

a phase rotator coupled to the receiver and operative to receive and rotate a phase of the conditioned signal by an amount related to the determined phase rotation, wherein the phase rotator rotates the phase of the  $I_{IN}$  and  $Q_{IN}$  samples to generate phase rotated  $I_{ROT}$  and  $Q_{ROT}$  samples. The receiver unit of claim 19, wherein the phase rotator includes comprising

a first set of multiplexers operative to receive the  $I_{IN}$  and  $Q_{IN}$  samples and to provide the  $I_{IN}$  or  $Q_{IN}$  samples based on a first signal,

a first set of exclusive-OR gates coupled to the first set of multiplexers and operative to selectively invert the received samples based on a second signal, wherein outputs of the first set of exclusive-OR gates comprise the  $I_{ROT}$  samples,

a second set of multiplexers operative to receive the  $Q_{IN}$  and  $I_{IN}$  samples and to provide the  $Q_{IN}$  or  $I_{IN}$  samples based on the first signal, and

a second set of exclusive-OR gates coupled to the second set of multiplexers and operative to selectively invert the received samples based on a third signal, wherein outputs of the second set of exclusive-OR gates comprise the  $Q_{ROT}$  samples.

21. (Currently Amended) The receiver unit of claim ~~19~~ 20, further comprising:

a demodulator coupled to the phase rotator and operative to process the  $I_{ROT}$  and  $Q_{ROT}$  samples to provide pilot symbols and data symbols, and to coherently demodulate the data symbols with the pilot symbols to generate recovered data.

22. (Original) The receiver unit of claim 21, wherein the demodulator includes

a pilot correlator operative to recover the pilot symbols from the  $I_{ROT}$  and  $Q_{ROT}$  samples, and

a data correlator operative to recover the data symbols from the  $I_{ROT}$  and  $Q_{ROT}$  samples.

23. (Currently Amended) The receiver unit of claim ~~18~~ 20, wherein the phase rotator is

operative to provide phase rotation in discrete increments.

24. (Original) The receiver unit of claim 23, wherein the phase rotator is operative to provide phase rotation in  $90^\circ$  increments.

25. (Currently Amended) The receiver unit of claim ~~18~~ 20, wherein the receiver includes at least one section comprising a plurality of signal paths, wherein each signal path is associated with a particular phase, and wherein at least one control signal is provided to switch the received signal through one of the signal paths.

26. (Canceled).

27. (Newly Added) A phase rotator for use with a receiver and operative to receive and rotate a phase of a conditioned signal output by the receiver by an amount related to the determined phase rotation, wherein the phase rotator rotates the phase of  $I_{IN}$  and  $Q_{IN}$  samples to generate phase rotated  $I_{ROT}$  and  $Q_{ROT}$  samples, comprising:

a first set of multiplexers operative to receive the  $I_{IN}$  and  $Q_{IN}$  samples and to provide the  $I_{IN}$  or  $Q_{IN}$  samples based on a first signal,

a first set of exclusive-OR gates coupled to the first set of multiplexers and operative to selectively invert the received samples based on a second signal, wherein outputs of the first set of exclusive-OR gates comprise the  $I_{ROT}$  samples,

a second set of multiplexers operative to receive the  $Q_{IN}$  and  $I_{IN}$  samples and to provide the  $Q_{IN}$  or  $I_{IN}$  samples based on the first signal, and

a second set of exclusive-OR gates coupled to the second set of multiplexers and operative to selectively invert the received samples based on a third signal, wherein outputs of the second set of exclusive-OR gates comprise the  $Q_{ROT}$  samples.

28. (Newly Added) A receiver unit comprising:

means for receiving and conditioning a received signal in accordance with one or more control signals to generate a conditioned signal and operative to downconvert and digitize the conditioned signal to provide inphase ( $I_{IN}$ ) and quadrature ( $Q_{IN}$ ) samples, wherein the means for receiving and conditioning comprises one or more circuit elements having one or more characteristics that are adjustable by the one or more control signals;

means for controlling coupled to the means for receiving and conditioning, the means for controlling being operative to determine a phase rotation corresponding to an operating state defined by the one or more control signals; and